

## SEQUENCE LISTING:

**SEQ ID NO:1** Amino acid sequence of mGy12.

5 1 MSSKTASTNS IAQARRTVQQ LRLEASIERI KVSKASADLM SYCEEHARSD  
51 PLLMGIPTSE NPFKDKKTQI IL\*

**SEQ ID NO:2** cDNA sequence of mGy12, variant 1

10  
1 CTAGAATTCA GCGGCCGCTG AATTCTAGGC GACGACGGCG AAGAGTGAGT  
51 GCCAAGGTTC ATATGGGAAG GACTTTGGGG TGAGCATCTT CTCTATTTC  
101 AGCTGGCTTT TCTGATTTTC AGAAAAGAAGA CTCATCAAAG ATGTCCAGCA  
151 AGACGGCAAG CACCAACAGC ATAGCCCAG CCAGGAGAAC TGTGCAGCAG  
15  
201 CTGAGATTGG AAGCCTCCAT CGAAAGAATA AAGGTCTCAA AAGCATCAGC  
251 AGACCTGATG TCATACTGTG AGGAGCATGC CCGGAGCGAC CCCCTGCTGA  
301 TGGGCATACC GACCTCAGAA AACCCGTTCA AGGATAAGAA GACCTGCATC  
351 ATCTTATAGT GGACCAGGAA GCGCCCCTTG CCTCTTAACG CAAACCACAG  
401 CAGCAACCTG AAGGGATTCC TTCAGCTTAC CTGGTAACCA CAGCTAGTAA  
451 CTAAAACACC CTTCTCTCGG AATAATAGAC CCTGAAGTCT CTCTTTTCA  
501 AGTTGTCCCT TCTTCACCCT TTACTGATT AATACAGAAT ACAAATCTTA  
551 TTTTCTATTT GATAACTATG GTATCATATT GGGTTACTGT ATAAGGAAAA  
601 TGGCAGGGGA GTTGTGGAA GCTTGTCTTT ACAAAATATA ATTGATTAAG  
651 ATATGTCAAG ACCTACATTG TCTAACGCAC GGCAAATTAA AATGTCGAGA  
25  
701 ATCACTTCAG TCAAAAACCT TTATATTCTG TTCTTAATAA TGTTTGTGCC  
751 AACCTATATC CCATGTAAGG GATCTGGGG AAAGGCATGT GTCTACAACC  
801 ATACCTTTT GCACTATGGG CACTAACAC CCTGAAACTT CCTGCGGTAG  
851 CTCCCTCCCT TCAGAGTTAC ATCATTATCC TGACTCTGTG TAGGTAAATT  
901 TCCGTGAAAT TTTTGTACAA AAAAAGGTAA ATGAAAGAAC GTTGCAGAAGA  
30  
951 TCATCTGCAT TATAATGAGT TGATGCTGTT CTCACTCCTC TCTTGGAAATT  
1001 GTGCTGGCCC CTTAGTCTAC AATAAACTGT GCCAATTAAA AACCTAAGGC  
1051 TAAAAGTGAAGGCCCTTGA TGGGGTCTTA ACTCATATCA GTCATTTGGG  
1101 CTTCTCTGAT CCTGAGGGCTA AGAAAGGGGA AGAGACCCCTC AGGAGGCAGC  
1151 TTCCCACTCCA GGGCTCTTGA TCTCTGCTGG ATTGGGGGTG GCCACCTCAG

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1201	AAACTTCCAC CCTCATGACT GGAATGGAAG AGGGGACCGA GAGCCTCAC
1251	ATCTCGGAGA GGGAGGAGAA ATTCTTAAAA ACAGCTGCTC TCCTGCGCCC
1301	AGCTTCACAG GCAGCCCTGC CCCTTCTCC TCACCAGCAT GGTACCTGCC
1351	CTTACTGCTA GAGCAGCTGC TTGTAGAGGG ACATTCCCTC CTTCCCAGTT
5 1401	TTAAGCTGGTG GACCACAGTG GGGGGAAAAA CATTCAAGCG ATATAAAGAC
1451	ACTTGGGCTC TTTGCAGATG CCTATACTTC CAACACTACC ATGTCCACAA
1501	ACCACCCCTGG GGGAGGGCCC TTCCAAAGGG AGGCTTGCTA GTTTCAGCGT
1551	CTAGCAGTTG GGTCCCTCACT TTTACTCCAA TTGTGAAAAT AGCCCACGTA
1601	CCCTCGCAGT GTCCAGTAGG GATCCCAGAG GCACATAACC AAGAAAGGAT
10 1651	TTTGACTTTG TCACAGTGAC TATTTAAAAT AATCTATTG AAGTCCAAAC
1701	CAAACACAAA GCCTGTGATA TTTTAGGTTA TTAAGGTAAC TGCTAATGAA
1751	GGATTTAAA AAGTGTCTC AAAAAGGACT TAGCCCCGGG AGTTGTTTAT
1801	AAAATTCCC CCACTTGTAT ACAGTGTGCA CTAAAAGAAA ATGTATTTA
1851	ATATCTAATG CCTGGGCTCT GAGCGTCATG CTTCTGGTG GTAAACATGC
15 1901	AGTCCTGTT CTAAGTGACT CAGAGGCATC AGAATTCTC CACGTTACCC
1951	ATCTGCTTGG CACTCGGAAC TGAGCGTGTG AAATCCATAG CGCTGCCAC
2001	AACCTGTTCT CACTGCTTAG CTCCCAGCTG GATTAAAGAC ACCTGCTCAG
2051	GCGGGAGAGA GAGAGAGAGA GCGAGCTTT ACCTTGGAAA AGTAAAGAT
2101	GGAAATGTAC ACCAAAAAAAG AGAATTTTA CATTAAATGG AACATTCTTT
20 2151	TTTTTACAA GTATATTTT CTACTGATAG TTTCAGAACCA CTAATCTTAT
2201	ATTCACTCTA ATCTTAAACA TGTTCTTTA AATATTTATA AGGCAGTTA
2251	TTACAGAATA TTTCATGCA ATCATGTGCA CATTATTGGT AGCAAACATA
2301	GTATATCCTT TAGTACTTTA GCATATTTT GTTAAAATAC TTTAATGGT
2351	AAGAAATGAA CTTGAGGTCC CAGGAGGTT TGTTGCCTTT TCATTGATTA
25 2401	GAGACAATAA ATATCTTGTAA ACTTCCTAAC CAGATCTGAG CTGTGCTCAC
2451	AATAATAATA ATGAAATCAG ATTCTTTGAT GCTGGACTCA GGAGGGAAAT
2501	CATTAGCCAA CTGTTGACTT ACTTATAGCT AGATGTCTAT GTGAGAAAGT
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2601	TATCTGTCTT TGTTCACTTA TGAAGCCGGT AACTGCAGCA GTATGTTGGT
30 2651	GATGTCATGA TGCACAGAAG TCCCATGTGG AGTGTTCCTTC CCACACTGAC
2701	AACTTGGCCT CCTTTCTGTG TGTTCACTCT GTTGTCTGAA CTAACACTCC
2751	CGCGAGCACT ATACTCTTTA TACTCTGATC CCCCTAGTTC ATCTTAAATT
2801	TGTCTGTGGC CCTGGCAAGA TAGCGTACAC AAGATTCCAT GACTCCAGAG
2851	CATCTTGAAG AAACATACAT ATTTGAAAG AGGGGAAATG TAGCAGATAG

2901 TTCACAAGCT GCGGGTTGTA GCTAAATATT CCATTCTTT GAAATCATGT  
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 3001 GGAAGGCTTG GTCTGCCTT TCTGTGTTG GATTATTTT ATACTTGCT  
 3051 GATCTTAAAG CTATCCATGG GGGAAATTTT ATACCAAACGA GTTAATAATT  
 5 3101 CTGATTCATC GTTTACACAA TGTAACATGT GTCATACTGG GGCCAGCGAG  
 3151 ATGGCTCAGT AGGTAAAGGT GCTTGATGCT AAGCCCGGCA GCCTGTGTTT  
 3201 CATCTACAGG ATGCACAACA TAAAAGAAAA GATCTGATTCC ACACAGGGTTC  
 3251 TCTTCTGACC TACACACACA CACACTAAAA TAACATTAA AAATATGTGC  
 3301 CAAATTATAT TTGTTCGGGT GCCACCTTCC ACCAGCTTAC CACTACGGTA  
 10 3351 GAACTGTCAA ATTCACTCTCC CTGAATTGT CTTAAAGGGG TGTCCATGCA  
 3401 CAGGCCAAG AGTCACCTCC AATGAAATAA ATGTAATACT GAAGTATGCC  
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 15 3601 CTTCCCTTGT TGTCAACAAGG GAATAGAAC AGAAGAACG GAGAGCCTCC  
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 3801 AACTATTCT GTGATGTTTC ATTTTAGCC ATGTTAACTC CTAACACATA  
 20 3851 TTCTCTTATG TCTCAGTAAA GTTTCATTG ATAAGTTGTT GAGATTCTGT  
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 3951 ACTGTGATTG TTATTGCAA CTCTGTTCTT TGGAAAGAAT AAAAGCATT  
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 4051 CTTTACTTAC TGGGTCAGTG CGTCATTGAC TCCTTCTGT GTTTGCCCA  
 25 4101 ATAAATTAAT AAAAGACCAA AAAAAAAAAA AAAAAAAAAA AAAAAAAA

*Sequencing done by Bio-Rad automated sequencer*

SEQ ID NO:3: cDNA sequence of mG $\gamma$ 12, variant 2

30 1 GCAGCGGCGG CGGCGGCGAC GACGGCGAAG AGTTCATATG GGAAGGACTT  
 51 TGGGGTGAGC ATCTTCTCTA TTTCCAGCTG GCTTTCTGA TTCACCCAC  
 101 CATTAAAAC CTGGAGGCAC TGGGCCACAC AAAGCCTTGC TGATTTTCAG  
 151 AAAGAAGACT CATCAAAGAT GTCCAGCAAG ACGGCAAGCA CCAACAGCAT  
 201 AGCCCAAGCC AGGAGAACTG TGCAGCAGCT GAGATTGGAA GCCTCCATCG

251 AAAGAATAAA GGTCTCAAAA GCATCAGCAG ACCTGATGTC ATACTGTGAG  
301 GAGCATGCC GGAGCGACCC CCTGCTGATG GGCATACCGA CCTCAGAAAA  
351 CCCGTTCAAG GATAAGAAGA CCTGCATCAT CTTATAGTGG ACCAGGAAGC  
401 GCCCCTTGCC TCTTAACGCA AACCACAGCA GCAACCTGAA GGGATTCCCTT  
5 451 CAGCTTACCT GGTAAACCACA GCTAGTAACT AAAACACCCT TCTCTCGGAA  
501 TAATAGACCC TGAAGTCTCT CTTTTCAAG TTGTCCTTTC TTCACCCCTT  
551 ACTGATTTAA TACAGAATAA CAATCTTATT TTCTATTTGA TAACTATGGT  
601 ATCATATTGG GTTACTGTAT AAGGAAAATG GCAGGGGAGT TGTGGGAAGC  
651 TTGTCTTAC AAAATATAAT TGATTAAGAT ATGTCAAGAC CTACATTGTC  
10 701 TAAGCACCGG CAAATTAAAA TGTCGAGAAT CACTTCAGTC AAAAACCTTT  
751 ATATTCTGTT CTTAATAATG TTTGTGCCAA CCTATATCCC ATGTAAGGGA  
801 TCTGGGGAGG AGGCATGTGT CTACAACCCT ACCTTTTGC ACTATGGGCA  
851 CTAACCACCC TGAAACTTCC TGCGGTAGCT CCCTCCCTTC AGAGTTACAT  
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2001	AGCGTGTGAA ATCCATAGCG CTGCCAACAA CCTGTTCTCA CTGCTTAGCT
2051	CCCAGCTGGA TTAAAGACAC CTGCTCAGGC GGGAGAGAGA GAGAGAGAGC
2101	GAGCTTTAC CTTGGAAAAG GTAAAGATGG AAATGTACAC CAAAAAAGAC
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2201	ACTGATAGTT TCAGAACACT AATCTTATAT TCACTCTAAT CTTAAACATG
2251	TTTCTTTAAA TATTATAAG GCAGTTTATT ACAGAATATT TTCATGCAAT
2301	CATGTGCACA TTATTGGTAG CAAACATAGT ATATCCTTA GTACTTTAGC
2351	ATATTTTGT TAAAATACTT TTAATGGTAA GAAATGAAC TGAGGTCCC
10	2401 GGAGGTTTG TTGCCTTTTC ATTGATTAGA GACAATAAT ATCTTGTAAAC
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2501	TCTTGATGC TGGACTCAGG AGGGAAATCA TTAGCCAAT GTTGACTTAC
2551	TTATAGCTAG ATGCTATGT GAGAAAGTAT AATATATATA TATACACATA
2601	TATATGACAT GTAAGAGTCA CTTTATTAA TCTGTCTTG TTCACTTATG
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2851	GCGTACACAA GATTCCATGA CTCCAGAGCA TCTTGAAGAA ACATACATAT
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3001	AAGAAAAGGA GTGTCATACA CTTCAAGGG AAGGCTTGGT CTGCGTTTC
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25	3151 TAACATGTGT CATACTGGGG CCAGCGAGAT GGCTCAGTAG GTAAAGGTGC
3201	TTGATGCTAA GCCCGGCAGC CTGTCTTCA TCTACAGGAT GCACAAACATA
3251	AAAGAAAAGA TCTGATTCCC ACAGGTTCTC TTCTGACCTA CACACACACA
3301	CACTAAAATA ACATTTAAAA ATATGTGCCA AATTATATT GTTCGGGTGC
3351	CACCTTCCAC CAGCTTACCA CTACGGTAGA ACTGTCAAAT TCATCTCCCT
30	3401 GAATTGTCT TAAAGGGTG TCCATGCACA GGCCCAAGAG TCACCTCCAA
3451	TGAAATAAT GTAATACTGA AGTATGCCAT GATGTTGTT GTTTCTTTC
3501	ATCGTAAGCC TGTAAGCAGG AAAAATACGT CAAATCAGAT AGAATAGAGC
3551	ATTTACCAAGT GGTGATGGC CTGGTCAGTC CTGTGCCGG TGACTTAGGA
3601	CCAGGCACGT CAGCTCTCTG AGCCTCCCT TCCCTGTTG TCACAAGGGA

3651 ATAGAACCGAG AAGAAGCTGA GAGCCTCCCT ATTCCCAGAT GCCCTGGTGG  
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3751 CTTCAAATAC CAGTTGTCT GTAGTGTGTA CTCACCTAAT CACTTGTAT  
3801 CCAGTGCCTG TTCTAGGTTT ATGGACTTAA CTATTTCTGT GATGTTTCAT  
5 3851 TTTTAGCCAT GTTAACCTCCT AACACATATT CTCTTATGTC TCAGTAAAGT  
3901 TTCATTTGAT AAGTTGTTGA GATTCTGTTA TTTGATAATA TTCTTCGGCT  
3951 GTCCCATCCAG CATCTTAATC ACTTTAAAAC TGTGATTGTT ATTTGCAACT  
4001 CTGTTCTTTG GAAAGAATAA AAGCATTTC TTTCACTTGC TAACATGCTC  
4051 ACAAAATGTGA GAGAAGAGTC ATTAAAAGCT TTACTTACTG GGTCAGTGCG  
10 4101 TCATTGACTC CTTTCTGTGT TTTGCCAAT AAATTAATAA AAGACCAAAA  
4151 AAAAAAAAAA AAAAAAAAAA AAAAAA

**SEQ ID NO:4** amino acid sequence of human Gy12

1. MSSKTASTNN IAQARRTVQQ LRLEASIERI KVSKASADLM SYCEEHARSD  
51. PLLIGIPTSE NPFKDKKTCI IL